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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,145	06/26/2001	Hoel Wyul Kim	P -224	1239

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EXAMINER
MARIAM, DANIEL G

ART UNIT	PAPER NUMBER
2621	6

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)
	09/869,145		KIM ET AL.
	Examiner		Art Unit
	DANIEL G MARIAM		2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3 & 4*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Translation

1.   An unofficial computer English translation, which has the same format (i.e., paragraph numbers) as the

Japanese Patent Number (10-200610) is provided to the applicant. This translation is also available on-line at

(URL): **http://www.ipdl.jpo.go.jp/homepg_e.ipdl,** and use the following instruction to get the unofficial

computer English translation of the '610 JP patent:

> Click on searching PAJ
> Click on Number Search
> Enter the number and click search
> In the results window click on the number.
> Click on details at the top.
> A separate framed window comes up.
> In the top frame, click the section that you
> want translated. It is slow so be patient. To
> print, just click somewhere in the frame with the
> translation, and click on print.

The Examiner has used the unofficial translation for the interpretation of Japanese Patent Number 11-250106.

An official translation will be provided with the next Office Action, up on applicant's request.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set

forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this
> title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter
> pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eisumu, et al. (Computer

Translation of Japanese Patent No. 11-250106).

With regard to claim 1, Eisumu, et al. discloses a method for extracting a   moment for an input image,

i.e., trademark image, comprising the steps of: generating a Zernike/Pseudo-Zernike moment in a predetermined

quadrant on plane Cartesian coordinates, obtaining a pixel value of the input image by projecting the input

image onto the quadrant, and multiplying each pixel value of the input image by the moment basis function

corresponding to the pixel position and then summing the results thereof (See for example, paragraph 13-41).

Although Eisumu, et al. does not explicitly call for generating a Zernike/Pseudo-Zernike moment in a

predetermined quadrant on plane Cartesian coordinates, it would have been an obvious matter of design choice

to modify the polar (or circular) coordinates used in Eisumu, et al. to generate the Zernike/Pseudo-Zernike

moment in a predetermined circular region by transforming/replacing it with a Cartesian coordinates, since no

new or unexpected results are seen to be attained by generating the moments using rectangular (Cartesian)

coordinates.

With regard to claim 2, the method according to claim 1, wherein the step of

generating a basis function comprises the steps of: obtaining a moment radial polynomial

according to the change in order and repetition and checking if the repetition is an even number;

generating the Zernike/Pseudo-Zernike moment basis function in the quadrant by using the

symmetry of a linear function passing the origin and having an absolute value of its slope of 1,

if the repetition is an even number; and generating the Zernike/Pseudo-Zernike moment basis

function in the quadrant without using the symmetry as in the above step, if the repetition is

an odd number (See for example, paragraph 26 –paragraph 38).

With regard to claim 3, the method according to claim 1, wherein the step of

obtaining a pixel value of the input image comprises the steps of: adjusting the input image to the size

of the ZernikelPseudo-Zernike moment basis function; and obtaining the pixel value of the input image by

projecting the input image of which the size is adjusted onto a quadrant by using x-axis

symmetry, y-axis symmetry, and origin symmetry (See Figs. 1-4).

With regard to claim 4, the method according to claim 1, wherein the predetermined

quadrant is a first quadrant (which reads on paragraphs 31-41).

With regard to claim 5, the method according to claim 2, wherein the linear function

passes the origin and has a slope of +1(i.e., y=x) (See paragraphs 26 through paragraph 38).

With regard to claim 6, claim 1 encompasses the limitation of this claim, and is rejected the same as claim 1. Thus, argument analogous to that presented above for claim 1 is equally applicable to claim 6.

Claims 7 and 8 are rejected the same as claims 2 and 3 respectively. Thus, arguments similar to those presented above for claims 2 and 3 are respectively applicable to claims 7 and 8.

Claims 9 and 10 are rejected the same as claims 1 and 6 respectively. Thus, arguments similar to those presented above for claims 1 and 6 are respectively applicable to claims 9 and 10. Eisumu, et al. Further discloses a computer readable recording medium on which a program implementing the same method is recorded (See for example, Figure 1).

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Number 6,226,417, and Publications to: Khotanzad, et al. "Invariant image recognition by Zernike moments", and Bailey, et al. "Orthogonal moment features for use with parametric and non-parametric classifiers".

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G MARIAM whose telephone number is 703-305-4010. The examiner can normally be reached on M-F (7:00-4:30) FIRST FRIDAY OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LEO BOUDREAU can be reached on 703-305-4607. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained from

either Private PAIR or Public PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-

9197 (toll-free).

DANIEL MARIAM
PRIMARY EXAMINER

June 22, 2004